



ALL-STATE LEGAL SUPPLY CO. 1-800-222-0810 EDS11 RECYCLED

Channel 13 TV Interference Test

<u>Type Set</u>	<u>Year</u>	<u>Range for No Interference</u>
JVC - 19"	92	< 1 FT
JVC - 27"	92	< 3 FT
DAYTRON - 19"	80	< 27 FT
MAGNA VOX - 19"	85	< 20 FT
ZENTH - 19"	85	< 25 FT
PANASONIC - 12"	85	< 25 FT
BLK & WHT - 10"	80	< 30 FT

The above test were conducted with a 100 mW, 216.8 MHz PTS Beacon with external rabbit ear antennas on the TV sets which were tuned for weak signal reception of Ch 13. In all cases, the range is the distance from the TV at which no observable interference occurred.

These measurements were made in Dallas at nominal ranges of 40 miles from the Ch 13 TV tower.

In bench tests, the effective power output of the Tag Signal which causes noticeable video interference to a TV set at 214 MHz is -75 dBm. For a typical TV sensitivity of -95 dBm, the total pathloss required to prevent this type of interference is 20 dB. This correlates to approximately one wavelength away from the TV which would be 4.5 feet.

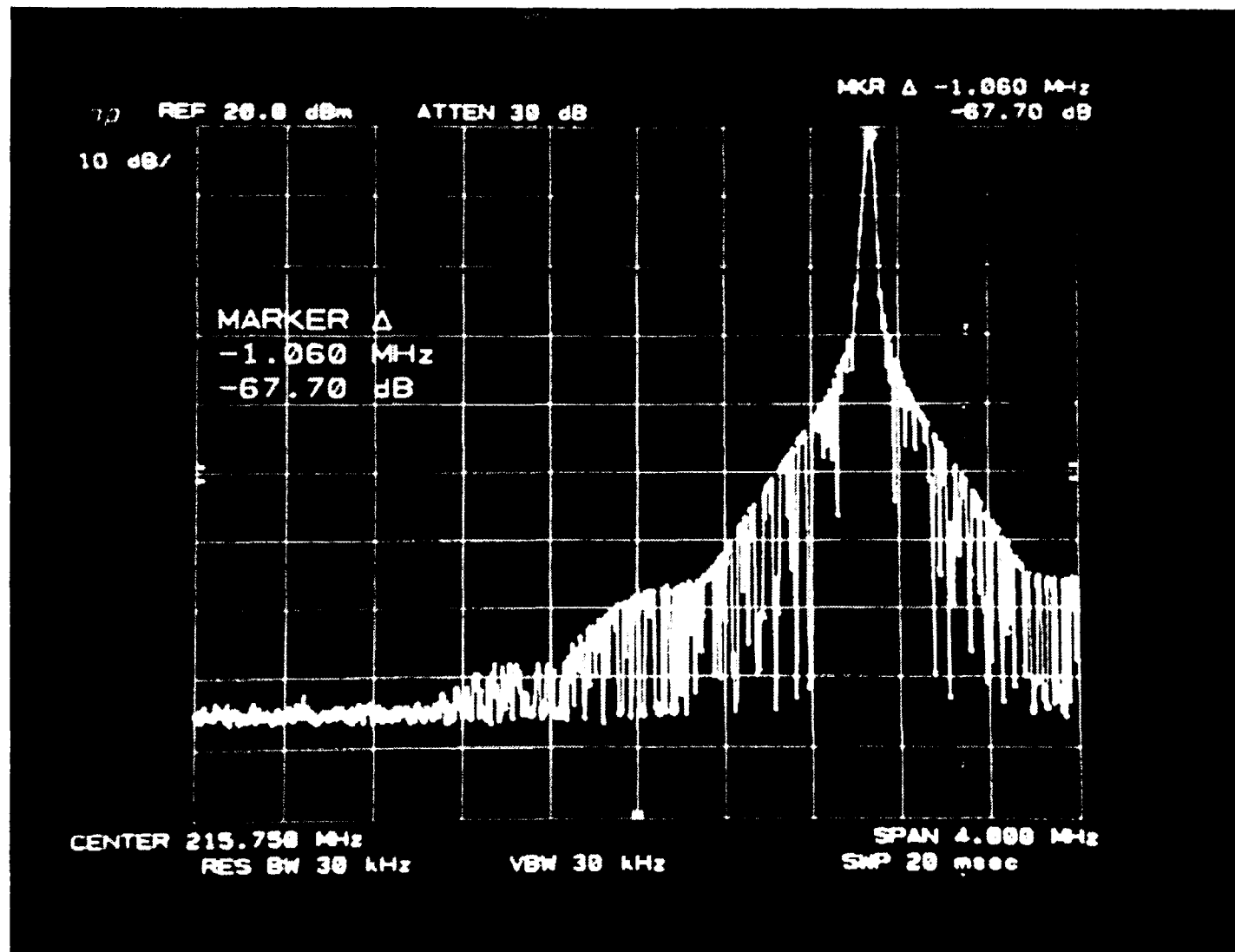
The interference caused by the peak power from a PTS beacon is shown in the PTS Tag Spectrum (see figure 2). The interference generated by the tag is -48 dBm at the sound carrier frequency. The required path loss to prevent interference would be the difference between a typical TV's receiver sensitivity (-95dBm) and the interfering signal level of -48 dBm. Therefore, the isolation or path loss needed to prevent interference is 47 dB. The PTS beacon has a -10 dB gain antenna which means that we would need an additional path loss of 37 dB. To achieve the additional 37 dB of path loss, a distance of 25 feet is required between the beacon and the TV receiver.

Summary Table Based On Peak Spectrum Levels (30 KHz BW)

Interference Level at Ch-13 Sound Carrier	=	-48 dBm
Typical TV Receiver Sensitivity	=	<u>-95 dBm</u>
Required Path Loss For No Interference	=	-47 dB
Less PTS Tag Antenna Loss	=	<u>-10 dB</u>
Adjusted Path Loss For No Interference	=	-37 dB
Equivlent Distance (Wavelengths/Feet)	=	5.6/25 ft

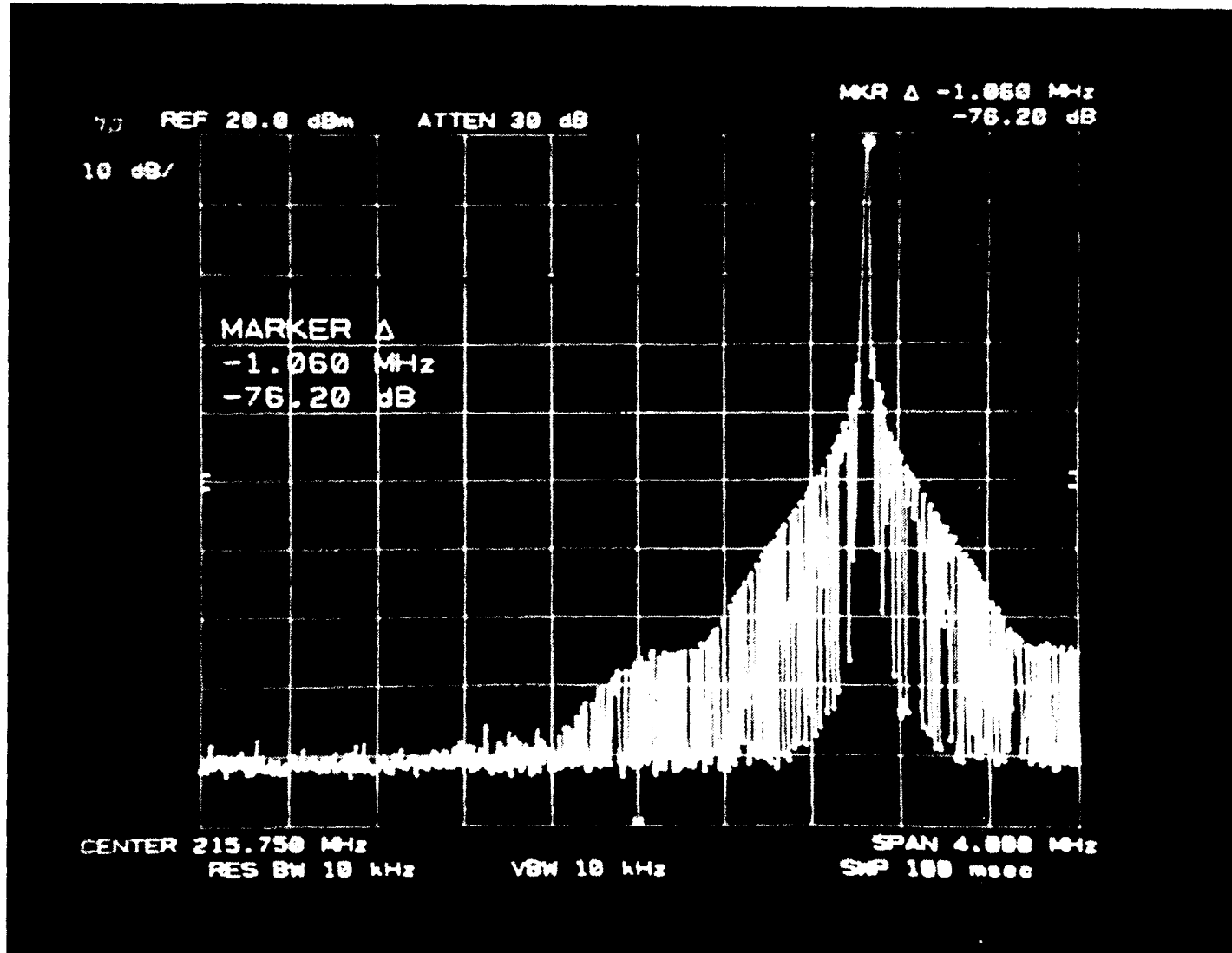
Average power levels are typically 20 db below peak levels

PTS TAG SPECTRUM (216.8 MHz, 90 Hz MODULATION)
PEAK LEVELS MEASURED IN A 30 kHz BAND WIDTH



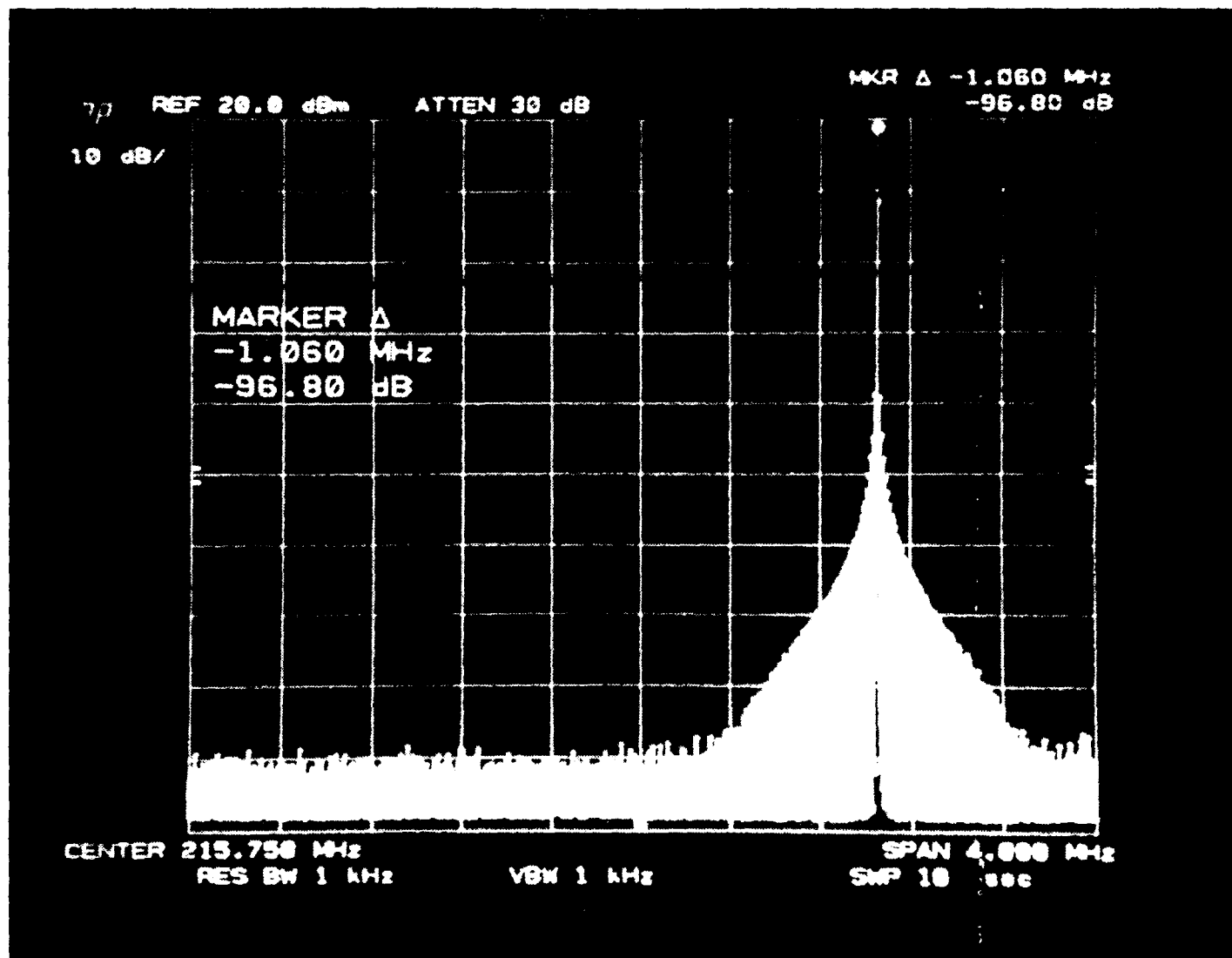
CENTER FREQUENCY = CH-13 SOUND CARRIER
PEAK LEVEL = 67.7 DBC

PTS TAG SPECTRUM (216.8 MHz, 90 Hz MODULATION)
PEAK LEVELS MEASURED IN A 10 kHz BAND WIDTH



CENTER FREQUENCY = CH-13 SOUND CARRIER
PEAK LEVEL = 76.2 DBC

PTS TAG SPECTRUM (216.8 MHz, 90 Hz MODULATION)
PEAK LEVELS MEASURED IN A 1 kHz BAND WIDTH



CENTER FREQUENCY = CH-13 SOUND CARRIER
PEAK LEVEL = 96.8 DBC

Channel 13 De-Sense Levels For Ground Trackers (*)

(De-Sense Level IN db) / [% of Available Tracking Range]

	<i>----- Distance from Ch-13 (Miles) -----</i>		
<u>PTS Frequency</u>	<u>0 -> 5</u>	<u>5 -> 10</u>	<u>-> 10</u>
219.96 MHz	(10) / [72%]	(0) / [100%]	(0) / [100%]
216.80 MHz	(12) / [64%]	(0) / [100%]	(0) / [100%]
216.40 MHz	(15) / [58%]	(1) / [99%]	(0) / [100%]

(*) Based on a nominal receiver sensitivity of -130 dBm

Channel 13 De-Sense Levels For Remotes & Helicopters (*)

(De-Sense Level in db) / [% of Available Tracking Range]

	<i>----- Distance from Ch-13 (Miles) -----</i>		
<u>PTS Frequency</u>	<u>0 -> 5</u>	<u>5 -> 10</u>	<u>-> 10</u>
219.96 MHz	(17) / [52%]	(11) / [70%]	(5) / [85%]
216.80 MHz	(20) / [48%]	(14) / [62%]	(8) / [78%]
216.40 MHz	(21) / [45%]	(14) / [62%]	(9) / [75%]

(*) Based on a nominal receiver sensitivity of -130 dBm